

Dr. David H. Bridges

Texas A&M University-Corpus Christi
Science & Engineering, Engineering

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Education

PhD, California Institute of Technology, 1993.

MS, Mississippi State University, 1987.

BS, Mississippi State University, 1986.

Professional Employment

Chair, Department of Engineering, Texas A&M University -- Corpus Christi. (September 2015 - Present).

Oversee operations of Department of Engineering. Manage faculty and staff. Oversee development of curriculum. Consider strategic plans for department, including growth of department.

Director, TAMU-CC Unmanned Aircraft Systems Program, Texas A&M University -- Corpus Christi. (April 2013 - Present).

Oversee the operation of the TAMU-CC RS-16 unmanned aircraft system and its development as a research tool for investigators at TAMU-CC.

Associate Professor of Mechanical Engineering, Texas A&M University -- Corpus Christi. (September 2012 - Present).

Teaching, research, service

Associate Professor of Aerospace Engineering, Mississippi State University. (August 1998 - July 2012).

Assistant Professor of Aerospace Engineering, Mississippi State University. (January 1993 - July 1998).

Administrative Appointments

Department

Department Chairperson (2015 - Present)

Direction of the TAMU-CC engineering program, faculty, and staff

College

Director (2013 - Present)

Director of TAMU-CC Unmanned Aerial Systems Program; responsible for conducting UAV exercises and disseminating data to faculty, and conducting TAMU-CC UAS Summer Institute

Professional Memberships

American Institute of Aeronautics and Astronautics

TEACHING

Teaching Experience

ENGR 2326, Dynamics
ENGR 3315, FLUID MECHANICS
ENGR 4390, SELECTED TOPICS: Introduction to Unmanned Aerial Systems
ENTC 3406, Fluid Mechanics and Fluid Power
ENTC 4320, HEAT TRANSFER
MEEN 3345, HEAT TRANSFER
MEEN 4335, INTRO AIRCRAFT AERODYNAMIC PRO
MEEN 4396, DIS: Performance Analysis of an Unmanned Aircraft

Teaching Awards and Honors

Inductee, Bagley Academy of Distinguished Teachers, James Worth Bagley College of Engineering, Mississippi State University. (2010).
Outstanding Educator Award, MSU James Worth Bagley College of Engineering. (2008).

SCHOLARLY AND CREATIVE ACTIVITIES

Publications

Refereed

Journal Articles

Wahidi, R., Bridges, D. (2012). Effects of Distributed Suction on an Airfoil at Low Reynolds Number. *AIAA Journal*, 50(3), 523-539. aiaa.org

Bridges, D. (2010). Inlet Stagnation Pressure Loss Estimate for a Simplified Thrust Model. *Journal of Aircraft*, 47(5), 1784-1788. aiaa.org

Bridges, D. (2010). Toward a Theoretical Description of Vortex Wake Asymmetry. *Progress in Aerospace Sciences*, 46(2-3), 49-80. www.journals.elsevier.com/progress-in-aerospace-sciences/

Bridges, D. (2008). Thrust and Drag Models for Performance Calculations for High-Speed Aircraft. *Journal of Aircraft*, 45(4), 1358-1366. aiaa.org

Bridges, D., Donnellhy, M. J., Park, J. T. (2008). Experimental Investigation of the Submarine Crashback Maneuver. *ASME Journal of Fluids Engineering*, 30(1), 011103-1 – 011103-11. asme.org

Bridges, D. (2007). Early Flight-Test and Other Boundary Layer Research at Mississippi State 1949-1960. *Journal of Aircraft*, 44(5), 1635-1652. aiaa.org

Bridges, D. (2003). Experimental Investigation of the Flow past a Submarine at Angle of Drift. *AIAA Journal*, 41(1), 71-81. aiaa.org

Bridges, D., Hornung, H. G. (1994). Elliptic Tip Effects on the Vortex Wake of an Axisymmetric Body at Incidence. *AIAA Journal*, 32(7), 1437-1445. aiaa.org

Koenig, K., Bridges, D., Chapman, G. (1989). Transonic Flow Modes of an Axisymmetric Blunt Body. *AIAA Journal*, 27(9), 1301-1302. aiaa.org

Non-Refereed

Book Chapters

Bridges, D. (2004). Of Aeronautics, Aerophysics, and Aerospace: A History of Aerospace Engineering at Mississippi State University. In Barnes McCormick, Conrad Newberry, and Eric Jumper (Ed.), *Aerospace Engineering Education During the First Century of Flight* (pp. 328-350). Reston, VA: American Institute of Aeronautics and Astronautics (AIAA). aiaa.org

Presentations

Bridges, D. (Author & Presenter), "Unmanned Aircraft Operations at Texas A&M University -- Corpus Christi," Texas UAS Expo and Summit, Lone Star UAS Center of Excellence and Innovation, Austin, TX. (March 30, 2016).

Bridges, D. (Author & Presenter), Yoel, D. (Author), "Unmanned Aircraft Operations at Texas A&M University – Corpus Christi," AIAA 2016 SciTech, American Institute of Aeronautics and Astronautics, San Diego, CA. (January 5, 2016).

Starek, M. J. (Author & Presenter), Bridges, D. (Author), Willis, M. (Author), "Update on UAS Coastal Activities at the Lone Star UAS Test Site," UNOLS Scientific Committee on Oceanographic Airborne Research (SCOAR), UNOLS, Miami, FL. (May 7, 2015).

Starek, M. J. (Author & Presenter), Bridges, D. (Author), Prouty, D. (Author), Williams, D. (Author), Jeffress, G. A. (Author), "Monitoring Coastal Processes at Local and Regional Geographic Scales with UAS," AGU Fall Meeting, American Geophysical Union, San Francisco, CA. (December 18, 2014).

Starek, M. J. (Author & Presenter), Bridges, D. (Author), "Unmanned Aircraft Systems for Coastal Mapping Applications," American Shore and Beach Preservation Association Conference, American Shore and Beach Preservation Association, Virginia Beach, VA. (October 18, 2014).

Starek, M. J. (Author & Presenter), Bridges, D. (Author), Davis, T. (Author), George, R. (Author), "UAS Coastal Mapping at an Island Campus," 15th Annual Coastal Charting and Mapping Workshop, UASCE Joint Airborne Lidar Bathymetric Technical Center of Expertise, Mobile, AL. (June 10, 2014).

Bridges, D., "UAVs: Where Are We Now and Where Are We Headed? The Lone Star UAS Test Site," 32nd Texas Aviation Conference, Texas Department of Transportation, Dallas, TX. (April 11, 2014).

Starek, M. J. (Author & Presenter), Bridges, D. (Author), Gibeaut, J. (Author), Tissot, P. (Author), "Unmanned Aerial System for Coastal Reconnaissance of the Near-shore Zone," ASPRS Annual Conference, American Society for Photogrammetry and Remote Sensing, Louisville, KY. (March 25, 2014).

Bridges, D. (Author & Presenter), Su, L. (Author), Wood, J. (Author), Wood, T. (Author), Price, D. (Author), "Oceanographic Investigations at TAMU-CC Using an Unmanned Aerial Vehicle," 2014 Ocean Sciences Meeting, Association for the Sciences of Limnology and Oceanography,

American Geophysical Union, and The Oceanography Society, Honolulu, HI. (February 26, 2014).

Bridges, D., "Research in Unmanned Aerial Systems (UAS)," 2013 SACNAS National Conference, SACNAS, San Antonio, TX. (October 4, 2013).

Wahidi, R. (Author & Presenter), Bridges, D. (Author), "Effects of Distributed Suction on an Airfoil at Low Reynolds Number," 40th Fluid Dynamics Conference and Exhibit, American Institute of Aeronautics and Astronautics, Chicago, IL. (June 28, 2010).

Bridges, D. (Author & Presenter), "Instruction in Experimental Methods – What Should We Be Teaching in Laboratory Courses," 48th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Orlando, FL. (January 4, 2010).

Wahidi, R. (Author & Presenter), Bridges, D. (Author), "Experimental Investigation of the Boundary Layer and Pressure Measurements on Airfoils with Laminar Separation Bubbles," 39th AIAA Fluid Dynamics Conference, American Institute of Aeronautics and Astronautics, San Antonio, TX. (June 22, 2009).

Bridges, D. (Author & Presenter), "Toward a Theoretical Description of Vortex Wake Asymmetry," 39th AIAA Fluid Dynamics Conference, American Institute of Aeronautics and Astronautics, San Antonio, TX. (June 22, 2009).

Bridges, D. (Author & Presenter), "Inlet Stagnation Pressure Loss Estimate for a Simplified Thrust Model," 47th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Orlando, FL. (January 5, 2009).

Bridges, D. (Author & Presenter), "Up to Speed: The Beginnings of Compressible Flow Study at Mississippi State," 47th AIAA Aerospace Sciences Meeting and Exhibit, American Institute of Aeronautics and Astronautics, Orlando, FL. (January 5, 2009).

Bridges, D. (Author & Presenter), "Estimate of the Disturbance Energy in a Vortex Wake," AIAA 38th Fluid Dynamics Conference and Exhibit, American Institute of Aeronautics and Astronautics, Seattle, WA. (June 23, 2008).

Wahidi, R. (Author), Bridges, D. (Author & Presenter), "Control of Laminar Separation Bubbles with Distributed Suction – Preliminary Studies," 46th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 7, 2008).

Cinnella, P. (Author), Bridges, D. (Author & Presenter), Vizzini, A. (Author), "Designing a Self-Assessment Process for ABET Accreditation," 45th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 8, 2007).

Bridges, D. (Author & Presenter), "Thrust and Drag Models for Performance Calculations for High-Speed Aircraft," 45th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 8, 2007).

Bridges, D. (Author & Presenter), "The Asymmetric Vortex Wake Problem – Asking the Right Question," 36th AIAA Fluid Dynamics Conference, American Institute of Aeronautics and Astronautics, San Francisco, CA. (June 5, 2006).

Hannigan, T. E. (Author & Presenter), Olsen, C. (Author), Bridges, D. (Author), Koenig, K. (Author), "Separating Aero and Space: Establishing a Dual Track for Aerospace Engineering Students," ASEE Annual Conference, American Society for Engineering Education, Chicago, IL. (June 1, 2006).

Bridges, D. (Author & Presenter), "August Rasper and Boundary Layer Research at Mississippi State - A Survey," 44th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 9, 2006).

Bridges, D. (Author & Presenter), Cash, A. C. (Author), Freudenthal, J. L. (Author), "Investigation of Scaling Effects in Submarine Flows," 44th AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 9, 2006).

Bridges, D. (Author & Presenter), "Finite Wing Lift-Curve Slope Calculations using Lifting Line Theory," 23rd AIAA Applied Aerodynamics Conference, American Institute of Aeronautics and Astronautics, Toronto, Ontario, Canada. (June 6, 2005).

Bridges, D. (Author & Presenter), Donnelly, M. J. (Author), Park, J. T. (Author), "Experimental Investigation of the Submarine Crashback Maneuver," 43rd AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 10, 2005).

Bridges, D. (Author & Presenter), "Of Aeronautics, Aerophysics, and Aerospace: Aerospace Engineering at Mississippi State University," 43rd AIAA Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 10, 2005).

Donnelly, M. J. (Author & Presenter), Bridges, D. (Author & Presenter), "Data Analysis of LCC Crashback Experiment," NAVSEA_NSWCCD Submarine Crashback Workshop, Carderock Division, Naval Surface Warfare Center, Bethesda, MD. (August 28, 2001).

Bridges, D. (Author & Presenter), "Preliminary Results of Submarine Yaw Studies in the Large Cavitation Channel," Fluids/Thermal Sciences Seminar, Dept. of Mechanical Engineering, University of Texas at Austin, Austin, TX. (March 11, 1998).

Bridges, D. (Author & Presenter), "Preliminary Results of Submarine Yaw Studies in the Large Cavitation Channel," Hydromechanics Colloquium, David Taylor Model Basin, Carderock Division, Naval Surface Warfare Center, West Bethesda, MD. (May 21, 1997).

Bridges, D. (Author & Presenter), Hornung, H. G. (Author), "Elliptic Cross Section Tip Effects on the Vortex Wake of an Axisymmetric Body at Angle of Attack," AIAA 24th Fluid Dynamics Meeting, American Institute of Aeronautics and Astronautics, Orlando, FL. (July 6, 1993).

Bridges, D. (Author & Presenter), "Elliptic Cross Section Tip Effects on the Vortex Wake of an Axisymmetric Body at Angle of Attack," Liepmann-Ludweig Seminar, German Aerospace Research Establishment (DLR), Goettingen, Germany. (June 30, 1993).

Bridges, D. (Author & Presenter), Hornung, H. G. (Author), "Effects of Tip Reynolds Number and Tip Geometry on the Vortex Wake of an Axisymmetric Body at Angle of Attack," AIAA 30th Aerospace Sciences Meeting, American Institute of Aeronautics and Astronautics, Reno, NV. (January 6, 1992).

Contracts, Grants and Sponsored Research

Grant

Bridges, David (Co-Principal), Mahdy, Ahmed Mahmoud (Principal), Gibeaut, James (Co-Principal), Coffin, Richard (Co-Principal), Starek, Michael John (Co-Principal), "MRI: Development of an Integrated Gas Monitoring and Source Identification Unmanned Aircraft System for Exploration, Compliance and Assessment," Sponsored by National Science Foundation, Federal, \$539,998.00. (September 1, 2016 - August 31, 2019).

Bridges, David (Co-Principal), Cifuentes, Lauren D (Principal), "Texas Affordable Baccalaureate Expansion Project," Sponsored by Texas Higher Education Coordinating Board, State, \$170,000.00. (September 16, 2016 - December 31, 2018).

Bridges, David, "Velocity Measurement Systems for a Low-speed Wind Tunnel," Sponsored by US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND, Federal, \$263,340.00. (November 16, 2013 - January 30, 2015).

Bridges, David, "Investigations of Scaling Effects on Submarine Propeller and Stern Boundary Layer Flows," Sponsored by Office of Naval Research, Federal, \$368,497.00. (July 1, 1999 - June 30, 2002).

Bridges, David, "A Detailed Study of the Flow Field of a Submarine Propeller During a Crashback Maneuver," Sponsored by Office of Naval Research, Federal, \$414,167.00. (January 1, 1998 - December 31, 2000).

Bridges, David, "A Detailed Study of the Flow Field of a Submarine at Large Angle of Drift," Sponsored by Office of Naval Research, Federal, \$418,249.00. (July 1, 1996 - June 30, 1999).

SERVICE

Department

Attendee, Meeting, TEES Annual Research Conference. (June 2016).
Attendee, Meeting, TAMU System Engineering Academic Partners. (June 2016).
Committee Member, ABET Steering Committee for Engineering. (June 2013 - May 2016).
Committee Member, TEES Academic Network. (May 2016).
Attendee, Meeting, Nuclear Power Institute Advisory Council. (April 2016).
Attendee, Meeting, TEES Engineering Technology Forum, Prairie View A&M. (February 2016).
Committee Member, FIRST Tech Challenge. (October 2015 - January 2016).
Attendee, Meeting, TAMU System Engineering Technology Forum, San Antonio. (November 2015).
Committee Chair, ENCS Strategic Planning Committee. (November 2014 - August 2015).
Attendee, Meeting, ABET Institutional Representatives Meeting. (July 2015).
Committee Member, Engineering Faculty Search Committee. (October 2014 - May 2015).
Attendee, Meeting, ABET Accreditation Symposium and Workshop. (April 2015).
Tour leader, TAMU-CC Island Day. (April 2015).
Committee Member, FIRST Tech Challenge Team. (October 2014 - February 2015).
Committee Chair, Engineering Faculty Search Committee. (October 2013 - June 2014).
Committee Member, FIRST Tech Challenge Team. (October 2013 - December 2013).
Committee Member, Engineering Faculty Search Committee. (October 2012 - May 2013).
Committee Member, FIRST Tech Challenge Team. (December 2012 - February 2013).
Committee Member, Handbook Criteria Committee. (September 2012 - October 2012).
Committee Chair, MSU Aerospace Engineering ABET Coordinator. (May 2010 - June 2012).
Committee Chair, MSU Aerospace Engineering Undergraduate Committee. (August 2002 - June 2012).
Faculty Advisor, MSU Sigma Gamma Tau Aerospace Engineering Honorary Society. (August 1993 - May 2011).

College

Director, TAMU-CC Unmanned Aircraft Systems Summer Institute. (July 2016).
Committee Member, COSE Steering Committee. (September 2014 - August 2015).
Director, 2015 Unmanned Aircraft Systems Summer Institute. (July 2015).

Director, TAMU-CC UAS Program, Unmanned Aircraft Systems Program, June 2015 Exercise. (May 2015 - June 2015).
Director, TAMU-CC UAS Program, Unmanned Aircraft Systems Program, March 2015 Exercise. (March 2015).
Director, TAMU-CC UAS Program, Unmanned Aerial Systems Program, June 2014 Exercise. (June 2014).
Director, TAMU-CC UAS Program, Wings over South Texas Airshow, NAS Kingsville. (March 2014).
Director, TAMU-CC UAS Program, Unmanned Aerial Systems Program, March 2014 Exercise. (March 2014).
Director, TAMU-CC UAS Program, Unmanned Aerial Systems Program, January 2014 Exercise. (January 2014).
Committee Chair, SACNAS UAS Session, 2013 SACNAS National Conference. (October 2013).
Director, Unmanned Aerial Systems Program Payload Workshop. (June 2013).
Director, Unmanned Aerial Systems Program March 2013 Exercise. (March 2013).
Event Director, Science Olympiad -- Elastic Launch Glider Event. (February 2013).
Director, Unmanned Aerial Systems Program January 2013 Exercise. (January 2013).
Committee Member, MSU Bagley College of Engineering Curriculum Committee. (August 2008 - May 2012).
Committee Chair, MSU Engineering College Faculty Council. (August 1993 - May 1999).

University

Committee Chair, Faculty Core Curriculum Committee. (September 2014 - Present).
Attendee, Meeting, Unmanned Aerial Systems Consortium. (August 2012).
Committee Member, MSU Holland Faculty Senate. (April 2005 - March 2011).
Committee Member, MSU University Committee on Courses and Curricula. (August 2004 - May 2010).

Professional

Reviewer, Journal Article, Journal of Fluid Mechanics. (October 2014).
Reviewer, Journal Article, AIAA Journal. (November 2013).
Committee Member, AIAA Fluid Dynamics Technical Committee. (June 2006 - May 2011).